

that cyanobacteria produce apophytochromes, identification of other cyanobacterial apophytochromes can be accomplished using routine methods available to one of skill in the art. Sequences for these apoproteins are provided in the sequence listing below. The corresponding nucleic acid sequences are known to those of skill in the art. One of skill will recognize that these sequences can be used to determine the design primers and probes for isolation of related genes in other organisms.

Cyanobacterial nucleic acid sequences are also available online at the Cyanobase Web Site.

In accordance with 37 CFR §1.121 a marked up version of the above-amended paragraph(s) illustrating the changes introduced by the forgoing amendment(s) are provided in Appendix A.

**In the Claims:**

Please amend the claims by substituting the following claims for the corresponding previously pending claims of the same number(s):

- Sub C1
5. The composition of claim 4, wherein the apoprotein polypeptide is as shown in SEQ ID NO: 9.
6. The composition of claim 1, wherein the apoprotein polypeptide consists of a lyase domain.
7. The composition of claim 1, wherein the apoprotein polypeptide is from Synechocystis.
8. The composition of claim 7, wherein the apoprotein polypeptide has the amino acid sequence of SEQ ID NO:2 (Cph2).
- B2

These amendments are made without prejudice and are not to be construed as abandonment of the previously claimed subject matter or agreement with the Examiner's position. In accordance with the requirements of 37 C.F.R. § 1.121, a marked up version showing the changes to the claims, is attached herewith as Appendix A. For the Examiner's convenience, a complete claim set of the currently pending claims is also submitted herewith as Appendix B.